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## DSpace as an Institutional Repository

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# **DSPACE as an INSTITUTIONAL REPOSITORY**



# Ohio Institutional Repository Day

- Lois Hamill, CA, DAS
- University Archivist & Professor
- Eva G. Farris Special Collections and Schlachter University Archives

# DSPACE - HISTORY

- An open source software application to create institutional repositories
- Developed by Hewlett Packard (HP) and Massachusetts Institute of Technology (MIT)
- 2002 first release
- 2007 HP and MIT form DSpace Foundation, not-for-profit to lead and support users
- 2009 DSpace and Fedora Commons merge, become DuraSpace
- Jan 2019 DuraSpace and Lyrasis merge effective July 1, 2019<sup>1</sup>

# NKU's EXPERIENCE

- NKU began work on an institutional repository in 2012-2013
- Problems included limited funding and on campus technical support
- SAA 2013 DuraSpace offered a hosted version DSpaceDirect
- March 2014 Steely signed a contract with DuraSpace to host our repository
- This presentation will be about a hosted repository from DuraSpace, but where possible will include more general information

# SOFTWARE

- DSpace is an out-of-the-box, open source software application
- Is a set of Java web applications and utility programs working together<sup>3</sup>
- Metadata is stored in a PostgreSQL or Oracle relational database<sup>4</sup>
- It runs on Linux, Solaris, Unix, Ubuntu, Windows and Mac OSX.<sup>5</sup> Linux is supposedly the most common operating system used. NKU has used Windows 7 and 10 as our interface
- Prerequisite software: Java 7 or 8, Apache Maven, Apache Ant, Relational Database - PostgreSQL or Oracle, Servlet 3.0 container (Tomcat 7+ or similar).<sup>6</sup>

# SOFTWARE con't

- DSpace works with most university authentication methods for local authentication including LDAP (which NKU uses), hierarchical LDAP, Shibboleth, X.509.<sup>7</sup>
- DSpace Direct is DuraSpace's hosted turnkey institutional repository application. Their website includes a list of registered service providers.<sup>8</sup>
- Additional software is required for file batch uploads. The specific combination depends on factors like your operating system

# HARDWARD/STORAGE METHOD/ CAPACITY

- For hosted version – our work computers and a web browser to access a cloud version of our repository
- Current repository is medium sized, or 150 GB of space
- DuraSpace maintains its own backup copies of our metadata and files. They offer the DuraCloud backup service, for a separate fee, to provide the institution with an optional backup copy.



# HARDWARD con't

- My department batch uploads digitized records. This requires the batch upload software, spreadsheet containing metadata and files to be uploaded all be stored on a local hard drive. This serves as our backup copy.
- Master tiffs used to create access copies are stored on a preservation server.
- The library cataloger only uploads items individually so doesn't have a copy of her metadata.

# TYPES OF ASSETS IT ACCEPTS

- DSpace recognizes and manages a large number of file format and mime types.
- PDF, Word, XLS, PPT, JPEG, MPEG, TIFF are some of the most common
- Out-of-the-box DSpace auto-recognizes common file formats, but DSpace can managed any format. It also has a simple file format registry to register any unrecognized format, so that it can be identified in the future.<sup>9</sup>

# VERSITILITY or CUSTOMIZATION

- Our IR includes - published articles, the student newspaper, theses and scanned documents in PDF format, some photographs and 200 scanned postcard images as jpegs, 1 oral history as an MPEG audio file, several spreadsheets.
- Since it is hosted, our IR is more limited than what can be done if self managed and you have programming skills. Our current file formats accommodate the record types we want, only video is missing

## Welcome

NKU's Digital Repository is a centralized digital location in which the university seeks to collect and provide open access to:

- permanent university records with high research value
- scholarship and creativity by the university community
- the heritage and history of the Northern Kentucky region as represented in the university's Special Collections

Examples of content types include, but are not limited to institutional research reports, policies and minutes of NKU governing bodies, as well as faculty and student authored publications and research.

This repository is managed by Steely Library for the benefit of the campus.

Terms of the Northern Kentucky University Institutional Repository Nonexclusive License Agreement are available [here](#).

## Communities

Select a community to browse its collections.

- [Chase College of Law](#)
- [College of Arts and Sciences](#)
- [College of Health Professions](#)
- [Faculty Senate](#)
- [Human Resources](#)
- [Institute for Student Research & Creative Activity](#)
- [Regents Professor Works](#)
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### Search

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### My Account

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## Discover

### Creator

[The Northerner staff \(967\)](#)  
[Staff Congress \(486\)](#)

### Subject

[American poetry Kentucky \(477\)](#)  
[Gilliam Family \(202\)](#)  
[Short stories, American Kentucky \(66\)](#)

### Type

[Text \(1455\)](#)  
[Article \(665\)](#)  
[Image, postcard \(202\)](#)  
[Book \(51\)](#)  
[Image \(22\)](#)  
[Thesis \(9\)](#)  
[Other \(8\)](#)  
[Dataset \(4\)](#)  
[Book chapter \(2\)](#)  
[Animation \(1\)](#)  
[... View More](#)

### Date Issued

[2000 - 2019 \(878\)](#)  
[1905 - 1999 \(1113\)](#)

### Date Created

[2010 - 2019 \(10\)](#)  
[2000 - 2009 \(47\)](#)

# OTHER CUSTOMIZATION

- File type is not the only customization
- Early analysis of the out-of-the-box Dublin Core (DC) fields identified fields for modification or addition. For example:
  - Relabel Author as Creator
  - Relabel Date as Date Issued
  - Add Date Created, Format, Relation, Relation is part of, Description URI and Rights
- We paid DuraSpace to modify these fields in our submission form and some of the search options
- Also can enter metadata through the batch upload for fields not in the Submission form or edit metadata for individual entries afterwards

# OTHER CUSTOMIZATION

- Workflow/item submission process to allow employees and students to electronically submit files and releases but require review before release into the IR.
- Current DSpace release form is just a check box. If it is possible to create a fill in copyright release form for NKU on the same screen we would have to pay again for customization.
- So far we have gotten DSpace to do what we want.

# USAGE METRICS

- DSpace options are Usage, Search and Workflow statistics
- Time periods are 1, 6, 12 months or total time
- These don't seem very helpful
- Alternate option – Google Analytics embedded

# USAGE METRICS

	Search Term	Searches	% of Total	Pageviews / Search
1	dateIssued_keyword:[2000 TO 2015]	9875	20.89%	0.00
2	dateIssued_keyword:2006	9757	20.64%	0.00
3	subject_keyword:American poetry Kentucky	9564	20.23%	0.00
4	dateIssued_keyword:2015	8958	18.95%	0.00
5	dateIssued_keyword:2005	7955	16.83%	0.00
6	dateIssued_keyword:[2000 TO 2009]	4047	8.56%	0.00
7	subject_keyword:Short stories, American Kentucky	3839	8.12%	0.00
8	subject_keyword:Drug addicts Rehabilitation	3821	8.08%	0.00
9	subject_keyword:Harm reduction	3817	8.07%	0.00
10	author_keyword:The Northerner staff	3043	6.44%	0.00

**Total**



All Users  
100.00% Pageviews

+ Add Segment

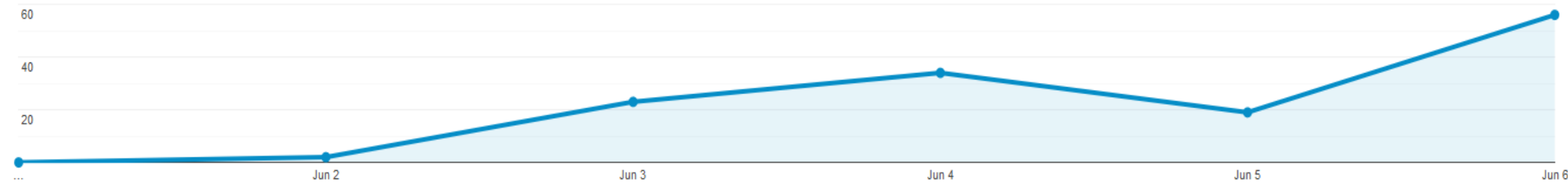
Jun 1, 2019 - Jun 6, 2019 ▼

Explorer Navigation Summary

Pageviews ▼ vs. Select a metric

Day Week Month

● Pageviews



Primary Dimension: Page Page Title Other ▼

Plot Rows Secondary dimension ▼ Sort Type: Default ▼

advanced

	Page ?	Pageviews ?	Unique Pageviews ?	Avg. Time on Page ?	Entrances ?	Bounce Rate ?	% Exit ?	Page Value ?
		134 % of Total: 100.00% (134)	78 % of Total: 100.00% (78)	00:00:17 Avg for View: 00:00:17 (0.00%)	21 % of Total: 100.00% (21)	10.00% Avg for View: 10.00% (0.00%)	15.67% Avg for View: 15.67% (0.00%)	\$0.00 % of Total: 0.00% (\$0.00)
<input type="checkbox"/>	1. /handle/11216/2711	22 (16.42%)	6 (7.69%)	00:00:21	1 (4.76%)	100.00%	18.18%	\$0.00 (0.00%)
<input type="checkbox"/>	2. /	18 (13.43%)	11 (14.10%)	00:00:16	10 (47.62%)	30.00%	27.78%	\$0.00 (0.00%)
<input type="checkbox"/>	3. /handle/11216/2402	12 (8.96%)	4 (5.13%)	00:00:06	3 (14.29%)	0.00%	8.33%	\$0.00 (0.00%)
<input type="checkbox"/>	4. /handle/11216/2711?show=full	9 (6.72%)	3 (3.85%)	00:00:11	0 (0.00%)	0.00%	11.11%	\$0.00 (0.00%)

# WORST ATTRIBUTES

- Not having the equipment and technical skill to run our own instance which limits customization
- Share management with people whose decisions impact us but they don't understand how the IR works
- Not glitzy enough for campus VPs, they want the BePress map
- Administrative authorization to upload files isn't separated from authorization giving access to the technical system management.

# IT INVOLVEMENT

- IT helped set up the LDAP log-on and recently embedded Google Analytics
- Greater involvement has come internally from the Library Systems dept. They originally withheld administrative rights to set up the collections hierarchical structure and other description work out of concern Special Collections would change technical settings
- Difficult to convince Systems that Archives should set up the structural hierarchy, that it should follow the organizational chart so we could connect to the master tiffs and analog records

# COST

- No cost to purchase open source software, but costs for hardware, storage, personnel, technical expertise, etc if an institution manages its own instance.
- There are costs for hosted versions
- DSpaceDirect annual costs<sup>10</sup>:
  - 75 GB \$3,940
  - 150 GB \$5,780
  - 250 GB \$8,670

# BEST ATTRIBUTES

- Respects archival principles, uses hierarchical structure
- Uses Dublin Core metadata which is also very suitable for archival records
- Affordability
- Stability for contributors and content
- Can embargo journal articles and automate release into IR

# BENEFITS

- IR more stable than website – 2 migrations within 5 yrs
  - Move digital collections
  - Intend to move finding aids
- Provide a single portal to search all finding aids simultaneously
- Currently testing linking within IR and between IR and website until all content moved. Enable links between finding aids and digitized records
- Provides 24/7 access to digital content if there are no copyright issues - university photographs

## Postcard of U.S. National Army Cantonment, Camp Taylor, Louisville, Ky.

URI: <http://hdl.handle.net/11216/2700>

Date Issued: 1917-10-04

### Description:

Postcard of a picture of a bird's-eye view of the Cantonment City at the U.S. National Army Cantonment, Camp Taylor, Louisville, Ky.

Type: Image, postcard

Format: jpeg

[Show full item record](#)

### Files in this item



**Name:** gilliam\_ky\_louisv ...  
**Size:** 71.05Kb  
**Format:** JPEG image

[View/Open](#)



**Name:** gilliam\_ky\_louisv ...  
**Size:** 63.21Kb  
**Format:** JPEG image

[View/Open](#)

### This item appears in the following Collection(s)

- [Kentucky Postcards](#)  
Kentucky Postcards

<b>dc.coverage.spatial</b>	Louisville, Ky.
<b>dc.date.accessioned</b>	2019-01-09T19:58:05Z
<b>dc.date.available</b>	2019-01-09T19:58:05Z
<b>dc.date.issued</b>	1917-10-04
<b>dc.identifier.citation</b>	MS 30 Gilliam Family Collection, Eva G. Farris Special Collections, W. Frank Steely Library, Northern Kentucky University.
<b>dc.identifier.uri</b>	<a href="http://hdl.handle.net/11216/2700">http://hdl.handle.net/11216/2700</a>
<b>dc.description</b>	Postcard of a picture of a bird's-eye view of the Cantonment City at the U.S. National Army Cantonment, Camp Taylor, Louisville, Ky.
<b>dc.description.sponsorship</b>	Digitization of the Kentucky Postcard collection was sponsored in part by a grant from the Kentucky Department of Libraries and Archives.
<b>dc.format</b>	jpeg
<b>dc.language.iso</b>	en_US
<b>dc.relation.ispartof</b>	Gilliam Family Collection
<b>dc.relation.ispartof</b>	Kentucky Postcards Series
<b>dc.relation.ispartof</b>	Louisville File
<b>dc.rights</b>	This postcard is in the public domain, so this image may be freely used.
<b>dc.subject</b>	Gilliam Family
<b>dc.subject</b>	Louisville (Ky.)
<b>dc.subject</b>	Camp Zachary Taylor (Ky.)
<b>dc.title</b>	Postcard of U.S. National Army Cantonment, Camp Taylor, Louisville, Ky.
<b>dc.type</b>	Image, postcard



# University Photographs

## Browse by

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Search within this community and its collections:

Copyright Northern Kentucky University

## Sub-communities within this community

- [Academic](#)
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## Collections in this community

- [Finding Aid - University Photographs RG-047](#)

## Recent Submissions

### [aerial 1972](#)

Northern Kentucky University



# SAMPLE DOCUMENTS

- Item Submission form
- IR Metadata Guide – field by field
- Batch upload process for Windows 10
- Digital Repository Policy which is a combination Collection Policy, inter-departmental management agreement and more  
<https://inside.nku.edu/library/about/policies/docs/digitalrepository.html>
- Workflow submission draft – splits between items coming to Archives 1<sup>st</sup> and Scholarly Communications

# QUESTIONS?



Thank-you

Lois Hamill, CA, DAS

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3 letter "L"s followed by  
numeral 1